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ON

INFANTILE MORTALITY,

AND THE

ESTABLISHMENT

OF

HOSPITALS FOR SICK CHILDREN.

Read before the Dublin Obstetrical Society,

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BY

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ETC. ETC.

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"It must be confessed that the knowledge of our sanitary condition as a people is still most indefinite, and that still less defined is our knowledge of the measures best adapted to correct the causes of disease and death, which are daily and hourly diminishing the efficiency, as well as curtailing the lives of our men, women and children."—*British and Foreign Medico-Chirurg. Review.*

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INFANTILE MORTALITY

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WHEN the subject we are about to entertain is one affecting the mortality of infants and children, I think it may fairly be designated one of interest to all, individually and collectively. Mr. Charles Dickens, in his speech at the recent festival in aid of the funds for the Hospital for Sick Children, London, said, "That from the earliest days of his life it had been one of his maxims, to disbelieve the man who told him that he took no interest in children. He felt still bound to that principle by all sorts of considerations, because he knew that any heart that could toughen itself against these little people, must be wanting in so many humanising experiences, as to be a perfect monstrosity in nature." In addition to the interest which attaches to this subject in a humane and charitable view, the question has become pressing, inasmuch as this special branch of medical science has been so far advanced by our sister kingdom and continental countries, that unless we bestir ourselves, we must take a second place in the race.

The statistics of the Registrar-General in England

show that nearly 26 per cent. of all born perish before the end of the fifth year, and that in London, before the attainment of the 10th year, 35 per cent. perish. In Scotland, the mortality under 5 years of age, with reference to the general mortality, constitutes an average of 40 per cent. ; and in Liverpool, at the same early age, a generation is nearly half exhausted. Of all born amongst the better classes, it has been ascertained that from 25 to 30 per cent. perish under 10 years of age ; 30 to 40 per cent. amongst the lower classes ; and under epidemic influences or other unfavourable circumstances, from 60 to 70 per cent. perish in the same limit of years. Of 14,450 boys, existing under 5 years of age, 2087 died in Liverpool in a single year ; of 14,045 boys in the rural parts of the county of Surrey, only 699 died in the same lapse of time.

In a statistical notice of the town and parish of Cheltenham, by Richard Beamish, Esq., F.R.S., he says, " The large number of deaths during infancy (as exhibited to the eye by this table) marks in the strongest manner the lamentable amount of ignorance which continues to prevail amongst females on the vital subject of physiology ; high and low, rich and poor, are alike amenable to those laws which govern our physical nature, and here we find out of an average of 732 deaths, 146 on an average perish before they attain 1 year or 20 per cent., while of those who never reach 5 years, about one-third perish.

* Of all classes in the eight principal towns in Scotland, about 46·50, or nearly half, die before the completion of their fifth year : this fact is obtained from the published reports of the Registrar-General for Scotland ; in Perth, in 1856, only 32 per cent. of the persons who perished during the year were under 5 years of age ; in Aberdeen, 35·5 ; in Edinburgh,

* Edinburgh Medical Journal, May, 1856.

41·8 ; in Paisley, 46·7 ; in Glasgow, 52·9 ; in Greenock, 46·8 ; in Leith, 47·5 ; in Dundee, 55·1. But we may place the facts in a different point of view, deduced from various enquiries, and once more chiefly from the valuable materials acquired by Farr in England, confirmed by the researches of Neison, and the results of foreign statisticians. Thus, of 100,000 children living under one year of age, not of the poorer classes only, nor of the sick only, nor exclusively in cities, but throughout England, and under all the ordinary conditions of life, it is believed that 17,355, or 1 in 6, die within the year. To parallel this proportion of mortality, we must pass, from what should be the day-spring of life, to the age of decrepitude, and we find it first reached a second time between the 80th and 85th years of existence. Again, of 100,000 living under 5 years of age, 6,349, or 1 in 16, die within the year : a mortality which is not again attained till from the 70th to the 75th year. Of a like number, between the ages of 10 and 15 years, only 527, or 1 in 190 die ; and between 30 and 45 years of age, 1143, or 1 in 88 die ; of 100,000 living of all ages united, from the new-born to the centenarian, 2,160, or 1 in 46, is the sum of the annual mortality. The average annual mortality of the nursling is therefore about 32 times, and that of the child up to 5 years of age about 12 times that of the vigour of youthhood ; as high as 14 times, and $5\frac{1}{2}$ times that of the manly prime : or the one is about 8 times, and the other 3 times, that of the gross or general average of human existence.

I regret to add, as far as our own kingdom is concerned, we may be said to be devoid of any recent statistical returns of births and deaths ; however, the deep importance of this subject is every day becoming more imperative, and it is confidently to be hoped that ere long we will be placed in a similar position with our sister kingdoms on this all important subject. In

Vol. I. of the Census of Ireland for 1851, by Messrs. Donnelly and Wilde, we find, that from the completion of the first to the end of the fourth, or from 1 to 5 years of age, the proportion per cent. of deaths for the entire country was 18·0 ; but this also fluctuated considerably in different localities—from the counties of Down, Monaghan, Queen's and Kildare, where it ranged from 14·4 to 14·9 in the hundred, to the civic districts of Galway town, where it was 20·0 ; to Dublin city, 20·2 ; Kilkenny city, 20·3 ; Waterford city, 21·5 ; Limerick city, 22·1 ; Belfast, 22·7 ; Cork city, 23·5, and Drogheda town, where it amounted to 25·5 per cent. This last locality has been long noted for its unhealthiness. The counties of Mayo, Roscommon and Kerry, in particular, furnish a high rate of mortality at this period of life : that for Kerry being 22·9 per hundred. From the 5th to the 10th year, the average per centage of deaths for the entire country was 9·7 ; but this also presents considerable varieties, according to provinces : from 8·0 in Ulster to 11·1 per cent. in Connaught ; Dublin city, 7·6 per cent. ; Galway, so low in the first year of life, was as high as 13·4. As at least 20 per cent. die in Dublin under 5 years of age, and 8 per cent. between 30 and 40 years of age, the mortality under 5 years has a relative proportion to the general mortality, between 30 and 40 years of age, of about 40 per cent.

The extraordinary mortality among children in Australia is one of the most painful phenomena of the present day. Of all inhabitants of the temperate zone, the return of the genial spring and summer brings to them not rejoicing but woe. The season which nature indicates as the time for the renewal of animal and vegetable life, becomes with them the season of death. It is hardly credible, if it was not for the accuracy of their statistical tables, that in Melbourne, during the summer months, the natural increase of population is actually checked, and that the number of births

scarcely exceeds the number of deaths. For the months of December, January and February last, the difference of births over deaths has been only 24. There can be no stronger proof of the anomalous and temporary character of the social condition of this colony two or three years ago, or of its subsequent sanitary progress, steady indeed, but presenting lamentable results, than a glance at the tables of births and deaths. For six months of 1853, the deaths exceeded the births in the proportion of 2 to 1 ; in 1854, the proportion was reduced to less than 3 to 2 ; in 1855, the births predominated as 21 to 17. This improvement continued in 1856, until in 1857 we had only 70 deaths for 100 births. These figures prove rather the astonishing degradation of their previous sanitary condition, than the merit of their present social state. In the fourth year of progressive improvement, the mortality is still greater than that which is recorded in the deadliest plagues. In a delightful climate, amid abundance of wealth, the children die more quickly and in greater numbers than in a land of pestilence and famine. Nor is this all, we know the wonderful renovating powers of nature ; we know how soon after a population has been decimated by any of the great scourges of our kind, it soon recovers its former numbers and its natural tone. But in the present case, it is the very source of supply that is threatened : it is the children—the men and women of the next generation—that disappear with such terrible rapidity. We do not speak of the grief which such bereavements occasion ; that country, no doubt, has its mothers to weep for their children, and refuse to be comforted, because they are not. However, we are glad to learn that the medical profession in Australia, to which this question peculiarly belongs, is stirring itself in the matter.

From the report on infant mortality in large cities, made by D. Meredith Reese, M. D., of New York, to

the American Medical Association, May, 1857, it appears that nearly one half of the whole number of deaths in large cities, occur in infancy, and under the age of five years.

In the city of New York, the whole mortality of the last half century, amounted to 363,242, (including the still-born) whilst the number of deaths under five years of age, were 176,043, which is nearly 49 per cent. of the entire city mortality. That the infant mortality in New York, is on the increase, is evident. In 1853, the deaths under five years of age, numbered 12,963, while in 1843, only 4,588 such deaths occurred, showing an increase of 8,375 within ten years, which is vastly beyond the proportioned increase of the population of the city during the decennial period, as shown by the census. This increased infant mortality in 1853, compared with 1843, is in a ratio very far beyond that of the aggregate of the deaths in persons of all ages. The deaths under five years in 1853, were 12,963, while the deaths of all others in the city, of every age, numbered only 9,749—so that the infant mortality exceeded all the other interments for that year by 3,224! These facts were obtained by Dr. Reese from a table of the mortality in the city of New York for the fifty years between 1804 and 1853 inclusive. The number of interments recorded as “still born,” or premature births, and the increase of this number, are worthy of note. In 1843, 760 of this class were recorded, and in 1853, no less than 1,930—an increase of 1,170, which is nearly 140 per cent. of increase within ten years.

These latter, with additional statistics by Drs. Emerson and Condie, of Philadelphia, and others, shew the appalling extent of infant mortality and its gradual increase. The dangers to life attendant upon infancy over the North American Continent, Dr. Reese classes thus : 1. Defective vitality at birth, transmitted hereditarily from one or both parents. 2. Mismanage-

ment of infancy by parents, nurses, and quacks, in feeding and physicing the newly born, by substituting slops, teas, &c., for their natural nourishment. 3. Deficient light, air, ventilation, cleanliness, clothing, fuel, and wholesome food—deficiencies incidental to cities, as compared with country towns or rural districts.

Returning to our own country, we find by Dr. Greenhow's recent valuable work* on sanitary science, that "croup, usually considered more fatal in damp districts, and by the sides of rivers and marshes," is not actually so. Lincolnshire and the fenny counties of England, presenting a lower mortality from croup than the north western or Welsh counties. His statistics go to prove, that males suffer more from croup than females.

From the same source† we learn that the mortuary statistics of the infantile population, seem marked by an absence of any uniform relation "between the proportion of deaths from all causes, and from particular diseases." Males die from nervous diseases in a much larger proportion than females; the male rate for England being taken at 100. The female is at 75; in some places as low as 67 or 68: in others, as Newcastle-on-Tyne, the female death-rate is as 91 to 100 males.

In connection with the nervous diseases of children, some facts which are revealed by this report seem inexplicable. Thus, for every hundred of the males of Liverpool that die from these diseases, more than one hundred and forty perish in Carnarvon. Convulsions cause more deaths in England and Wales generally, than either fevers, or bowel complaints, and almost as many as scarlatina, measles, small-pox, and hooping cough put together: though its sphere is confined, in

* Papers relating to the Sanitary State of the People of England, &c. communicated to the General Board of Health, by Edward Headlam Greenhow, M.D. London, 1858.

† British and Foreign Medico-Chirurgical Review, January, 1859.

the reckoning before us, to children under the age of five. The great anomaly, however, is in the town of Carnarvon. This, as many may have had an opportunity of observing during the present season, is apparently a healthy and well situated town : indeed, its general health is found by the tables to be somewhat better than that of England and Wales upon the whole. Even as regards disorders of children generally, its statistics are not particularly noticeable, but in these special maladies, the convulsive or nervous diseases of the children, its returns are most astonishing. Out of 1000 deaths in each sex, this cause stands : in London, for 76 males and 61 female deaths ; in the north-western counties, for 128 and 106 ; in Yorkshire, for 148 and 121 ; in Manchester, for 130 and 107 ; in Liverpool, for 99 and 85 ; but in Carnarvon, for 240 and 220 !* Now, why children should die in Carnarvon of hydrocephalus, convulsions, and teething, at such a rate as this, appears truly an enigma. The maladies in question are found usually more fatal in manufacturing than in agricultural districts, a circumstance very intelligible. Carnarvon is neither a densely populated, nor a high-pressure manufacturing town ; and even if its atmosphere should be otherwise than salubrious, which I should not think it was, it is hard to imagine any condition of climate which would necessarily throw children into fits. Dr. Greenhow tries to explain this anomalous mortality by the theory of race ; and he thinks that as Monmouthshire and the Welsh counties generally, present rather a high mortality in other disorders of a character analogous to this, possibly Celtic blood may have something to do with the matter.† The conjecture is an ingenious one, and considering the known temperament of the Welsh,

* These returns are objected to by Dr. W. Williams, on the score that the term "convulsious" is indiscriminately applied to children's diseases by Carnarvon chemists and quacks.

† TIMES, September, 1858.

even plausible ; but, unfortunately, it is completely upset by the fact, that the two counties where the mortality under this head is lowest, happen to be peopled from a Celtic stock also, viz., Cornwall and Cumberland. This, however, though so striking an anomaly, is only one out of the many supplied by the statistics before us, and for the solution of which all the patience and acuteness of sanitary philosophers will be required.*

The nervous diseases of infants afford further proof of the mischief inflicted by unfavourable kinds of labour. The fatality of this disease is very great, as we have already seen, but very variable in different districts. In Buckinghamshire, Cumberland, and Herefordshire, these diseases do not cause 1 death for every 1000 of the population. In the West Riding of Yorkshire, they are three times as fatal. The "*prima origo mali*," is traced to factory labour. Parents living in a vitiated, noxious atmosphere, become feeble and anæmic : the offspring partakes of the same weakly state of constitution, and is easily carried off by disease. The fatality does not prove the entire mischief—for wherever a profuse infantile mortality prevails, the remaining children are inferior to the average which beget a deteriorated race. This is a point of more moment, and pressing interest than even the endeavour to stem the mortality, the result of epidemic disease, in the prime of life.

Under acute non-infectious diseases, Mr. Simon includes convulsive or nervous diseases, diarrhœa and respiratory inflammations, as regards their endemic

* The following explanation for the excessive mortality among young children from affections of the head in the town of Carnarvon, was given me by a distinguished member of the Irish Bar, who is conversant with the social condition of the inhabitants of Wales in general, and of that town in particular: it seems by far the most rational of those yet offered. He states, "that in Carnarvon the wives of the operatives are very industrious, and that they may the more uninterruptedly pursue their several avocations, they are in the habit of giving their children *opiates*, made up in sweetmeats and such like palatable forms, and that within the last few years the number of mothers brought to justice for this species of infanticide, has been greatly on the increase."

prevalence among young children. These diseases are peculiarly obnoxious to large manufacturing towns and districts. We all must admit that sudden vicissitudes of temperature induce pulmonary and bronchial diseases generally, and that improper food produces diarrhœa. But Mr. Simon naturally inquires, "why should the death-rates vary as they do in different districts of the country. Thus, the death-rates in three of the healthiest country districts of England from these diseases, is 925 ; in the unhealthiest district it is 6.895! Why are non-infectious infantile diseases seven times as fatal in one district as another? In reply to this question, he considers the complaints separately : 1st, nervous disorders of early life, killed in nine years, from 1848 to 1856, 330,881 young persons, or 37,000 annually. The average mortality is $2\frac{1}{2}$ times as high throughout the north-western counties as throughout the eastern, south eastern, and south midland districts. Two-thirds of these deaths are registered as by "convulsions." The foul and vitiated state of the atmosphere has been the assigned cause of this evil, the mortality in the Dublin Lying-in-Hospital having been wonderfully reduced by more efficient ventilation of the wards. 2. The death-rate amongst infants from non-tubercular diseases, almost exclusively inflammations of the respiratory organs, is very large, 28,763 infants having died of pneumonia, bronchitis, and croup, in 1856. The diseases seem also attributable in a great measure to the inhalation of impure air ; the children who are freely exposed to the air in rural districts, being comparatively exempt, whilst those who are "cooped up" in close rooms, as in towns, readily fall victims to such poisonous influences. 3. Diarrhœa and dysentery annually extinguishes more than 11,000 infants under five years of age—the causes of these diseases are to be found in bad food, deficient sewerage and ventilation ; here also the death-rates vary from 76 to 1.779. The gross mor-

tality among young children, is referred by Mr. Simon to the varying prevalence of two local causes. 1st, To difference of degree in common sanitary defects of residence. 2ndly, To occupational differences amongst the inhabitants, there being certain large towns where the homes are badly kept, and the children but little looked after.* The varying mortality from small-pox in the different towns in England, shews that vaccination is not yet very satisfactorily carried out. In East Stonehouse, we find the deaths in 100,000 from this pestilence, number 146 : in Plymouth, 134 ; Penzance, 105 ; while in Birmingham and Manchester, the numbers are only 37 and 26 respectively, in 100,000. Thus we find the mortality from this cause, four times as great in one town as another. To foreign countries who have learned vaccination from us, it must seem anomalous that we still lose four or five thousand annually by this disease ; and a recent report of the Registrar-General, shews a curious illustration of slow social progress, that in certain districts in England during the three months, ending 31st March, 1858, sixty years after Jenner's discovery, deaths from small-pox, amounted to a fourth part of the entire district.

The treatment of diseases incidental to children, with those of adults, has often been tried, and I may add, invariably found to work ineffectually. The special attention and requirements for the treatment of children's diseases, seem incompatible with the working and duties attached to a large hospital. Such is the experience of physicians of eminence in London and elsewhere, where such a combined system has been attempted. In default of internal accommodation for sick children in wards of a special hospital, the next step in a right direction has been the establishment of dispensaries for their special extern treatment. These institutions, at best imperfect, at the same time con-

* British Medical Journal.

duce very materially to the alleviation of disease, particularly in the infantile stage, as well as a means of affording to students an opportunity of acquiring a practical acquaintance with diseases of early life, and also of affording instruction to mothers and nurses, as regards well-directed hygienic requirements. Of course the deficiencies of such institutions are self-evident, viz., in alleviating those maladies for which the surveillance of the physician and careful tending of experienced nurses, are so indispensable, and also of affording that intimate knowledge of the nature and treatment of children's diseases, which can only be acquired at the bed-side of the patient—information which must react beneficially on all grades of society.

I am indebted to the kindness of H. A. Bathurst, Esq., Hon. Secretary to the Hospital for Sick Children,* Great Ormond-street, London, for the Sixth Annual Report of that Institution. This valuable hospital, (established 1852) patronized by her Majesty, the Queen, has for its objects : 1. The medical and surgical treatment of poor children. 2. The attainment and diffusion of knowledge regarding the diseases of children. 3. The training of nurses for children.

The *TIMES* of November 9, 1857, writes of this institution thus : "It is still the only hospital in the metropolis specially set apart for the reception of sick children, whilst yet 400 out of every 1,000 deaths last year in this city, were stated by the officer of health to be those of infants under five years' old." The following facts shew the urgent necessity for the due support of this and similar institutions in the great metropolis : 1. The mortality of children under 10 years, is only 2 per cent. less than it was fifty years ago ; of 50,000 persons dying annually in London, 21,000 are children under that age. The hospitals of London are inadequate to afford accommodation for

* Sixth Annual Report of the Hospital for Sick Children, 49, Great Ormond-street ; patron, her Majesty the Queen. London, 1858.

sick children. In January, 1843, of 2,363 patients in all the hospitals, only 26 children were under 10, suffering from diseases peculiar to their age. Medical knowledge concerning children's diseases, is very defective, owing to the want of sufficient opportunities for their study. A special hospital for children is needed, because the proper care for sick children requires special arrangements. Children's hospitals have been established with success in seventeen of the chief cities of Europe, but there was not one in the United Kingdom until the present hospital was established. We find that during the past year, 325 in-patients, and 9,025 out-patients have been admitted, making a total of 1,483 in-patients, and 39,330 out-patients, who have received the benefits of this hospital since it was opened in February, 1852.

The committee hope to place this institution on a permanent basis by commencing two funds, one for endowment, the other a building fund. On the recent festive occasion at which Mr. Charles Dickens presided, the funds were materially strengthened by the addition of £2850 ; and for £500 of this sum the committee are indebted to an anonymous benefactress. The report goes on to thank those clergymen who either preached on behalf of the hospital or who allowed sermons to be preached and collections to be made for it in their churches. The medical profession have given their cordial support to this charity from its commencement ; 71 of their number, including some of the most distinguished physicians and surgeons, officiated as stewards at the festival. Sir Charles Locock, speaking of it, says, " It is a decided want in this metropolis—you have my best wishes for its success, and shall have any influence I can obtain for you." Dr. Latham, " I will venture to say, that the poor as a class, will gain more from the establishment of an hospital for children's diseases, than they would from any general hospital." Dr. Watson writes, " It

is a truth which ought to be confessed, that the disorders of early life are less generally understood than those that are incident to maturer age : and it is a truth which still more deserves publicity, that the imperfection of our knowledge is mainly owing to our want of hospitals, dedicated to the reception of sick children." Sir John Forbes considered "The establishment of a children's hospital in London, while proving an inestimable boon to themselves and their distressed parents, must also tend greatly to the advancement of medical knowledge in the important department of infantile diseases." Mr. Charles Dickens in his speech at the same festival, referred to the printed papers of this hospital, where you might read with what a generous earnestness the highest and wisest members of the medical profession testify to the need of it : to the immense difficulty of treating children in the same hospitals with grown up people, by reason of their different ailments and requirements, to the vast amount of pain that will be assuaged, and of life that will be saved, through this hospital, not only among the poor, but amongst the prosperous too, by reason of the increased knowledge of children's illness, which cannot fail to arise from a more systematic mode of studying them. To Dr. West is mainly due the foundation of this valuable institution, but where all the medical staff are so assiduous it might seem almost invidious to isolate one, except that he is pre-eminently distinguished as the pioneer in this great work of charity in this country. The present building contains 31 beds, a very moderate expense would fit it for the reception of many more. The poor amongst themselves support a Samaritan fund in connection with the hospital, for the help of those who are discharged, and to send convalescent children into the country ; and subscribe £50 annually in pence for this purpose. During the past year the

number of in-patients amounted to 325, amongst these 48 deaths occurred, or nearly 15 per cent.

The next institution,* a report of which, dated London, 1857, I have in my possession, is the Royal Infirmary for Children and Women, Waterloo-bridge Road, under the immediate patronage of Her most gracious Majesty the Queen, and the Royal Family. This institution founded in 1816, originally bore the name of the Royal Infirmary for Children, and was established for the purpose of rendering prompt medical aid to the infant poor of the metropolis. It contains 16 beds for in-patients, 13 of which are appropriated to the Parish of Lambeth, and 3 open to the metropolis generally. The Parish of Lambeth has been the means, through the Trustees of the Hayles' Estate, of materially assisting the charity, by an annual payment of £450 towards its funds, on the condition, that 13 out of the 16 beds be appropriated to its parishioners. Thus, the original intention of the founders to convert the Infirmary into an Hospital has been accomplished, and the sphere of its usefulness considerably enlarged. The average number of cases benefitted up to the present time has been at the rate of 5000 annually.

In the first report† of the Clinical Hospital for Diseases of Children, Stevenson-square, Manchester, by the late Dr. A. Schoepf Merei‡ and Dr. J. Whitehead, 1856. The objects of this institution are set

* The Royal Infirmary for Children and Women, Waterloo-bridge Road, patronised by Her Majesty the Queen, and the Royal Family. London, 1857.

† First Report of the Clinical Hospital for Diseases of Children, Stevenson-square, Manchester; containing an account of the first 530 patients there treated, by Drs. Merei and Whitehead. Manchester, 1856.

‡ August Schoepf Merei, M. D. of Vienna and Pavia, was a Hungarian refugee, and was formerly the founder and director of the Children's Hospital at Pesth; Professor of the History of Medicine in the University, and editor of the only Hungarian Journal. During the civil war he joined the revolutionary party, and rendered them valuable professional services. He was a highly educated man, could speak Latin fluently, as well as many of the modern languages. Whilst at Manchester he established a Children's Hospital, and published a series of Lectures on the Diseases of Children in one of the medical periodicals. His death was deeply regretted by a large circle in Manchester.

forth : it is intended not more as a charity than as a clinical school for the department of medical science to which it is devoted. To carry on scientific investigations into the causes, nature, and treatment of diseases of children. To inquire into the causes and character of the principal infantile diseases prevalent in Manchester, the progress of physical development in childhood, and the causes which hinder its due advancement : the different modes adopted among the poorer classes, of nursing, feeding, and managing their children, with the development respectively of health and disease : to impart instruction to mothers and nurses, and to spread sound principles on the subject of nursing and managing children amongst the lower ranks : to afford to students and young practitioners opportunities of acquiring practical knowledge in this branch of medicine, and to deliver periodically for this purpose, clinical lectures, illustrated with appropriate cases, on the importance of separate establishments for infantile diseases. We subjoin the following : " Sick children were formerly admitted promiscuously with other patients into infirmaries, &c. ; but the importance of separate establishments for this class of patients, in which suitable arrangements and undivided attention are exclusively directed to their particular requirements, and the peculiarities of their ailments, is sufficiently obvious. The rate of mortality of children in Manchester is estimated at more than 50 per cent. before they attain their fifth year."

According to this report the greatest number of patients, with the greatest number of deaths, falls upon the 1st year of age, viz. out of 146 there were 20 deaths : during the 2nd year, out of 105, eight deaths, and so on in proportion to the advancing age ; the frequency of diseases and their relative danger rapidly decrease, especially after the third year, clearly showing the value of hospitals and clinical schools for diseases of children, whether regarded in the light of

humanity or as serving the interest of science. This elaborate report goes on to treat of physical development in a masterly manner, but as this branch of the subject is somewhat irrelevant on the present occasion, we shall content ourselves by concluding with the following aphorism of these distinguished physicians as regards the most suitable diet for infantile life, to which we fully subscribe. "This much however as an essential principle, every mother should be convinced of, that milk alone is decidedly the best food, at least during the whole of the first year of infancy, and that every other kind of food in addition, or as a substitute for milk, is calculated to produce an unfavourable condition of the system." This truth once generally established, a great point would be gained, as there would be less tendency to substitute for or mix prematurely with milk, other kinds of food; and efforts would be made to overcome occasional difficulties in its use, by endeavouring in various practicable ways, to improve its digestive qualities and render it more suitable.

*Turning to our continental neighbours, and as if before entering the Hospital of the *Enfants Malades* at Paris, let us calmly review the following general statement lately made by M. Bertillon before the Academy of Medicine of Paris. In a period of ten years there have been in France 9,700,000 births, and of these children 1,500,000 died within the first year of life. Out of 1000 female births 858 girls reach the age of one year, whereas 1000 male births yield but 858 boys one year afterwards. In order words and in round numbers, it may be said that out of 100 children of each sex from birth to one year of age, the annual deaths are 20 boys and 16 girls, viz. one fifth part of the boys and one sixth of the girls. This law is so constant that it holds good for the whole

* Administration Generale de l'assistance Publique à Paris: compte moral administratif de l'exercice, 1855. Paris, 1856.

country or each department taken separately, with extremely slight variation. The total number of sick children treated in the Hospital of the Enfants Malades in 1855 was 3718, deaths 694, or at the rate of 18.66 per cent. : for a period of years the average mortality was about 1 in 5.20, or about 19.25 per cent. The number of beds usually occupied is about 320, and the annual expense of each £25, daily cost of each patient about 17 pence.

The Empress Eugenie has established an hospital for the treatment of diseases incidental to children, called after herself. In the year 1855 an average of 308 beds were filled. In this institution the rate of mortality was 1 in 6.09 in 1854, and in 5.40 in 1855.

St. Anne's Hospital for sick children at Vienna,* is well worthy of comment ; it now forms an integral part of the justly celebrated medical school of Vienna, founded by the late Professor Mauthner ;† it continued to thrive under his care for an average of nineteen years. Previous to 1855, the ratio of mortality has been as high as 24.50 per cent. the cost of each patient, the strictest regard being had to economy, has been reduced to 23 shillings, the mean daily cost of each about 16 pence : 49 physicians availed themselves of the clinical instruction afforded on this most important branch of medical science ; and 78 females were instructed as regards the hygienic principles of managing children, not only in sickness but in health

* Jahres-bericht des ersten allgemeinen St. Annen—Kinderspitals für, 1855. Wien, 1856.

† We regret to say, death has added to its long list during the past year, this distinguished man. During the epidemic cholera in 1831, he was indefatigable in his exertions, and in 1837, having established a private hospital for sick children, in the course of ten years, with the substantial sympathy of some affluent patronesses, he was enabled to build and endow the hospital of St. Anne's. Professor Mauthner was the first to institute clinical teaching on the diseases of early life ; and for his many national services he obtained the distinguished order of the Iron Crown. He died after a short illness, leaving 10,000 florins to the hospital of St. Anne. All his valuable library relating to the science of pædiatrics, he bequeathed to the klinik, together with his pathological collection.

—the out-patients numbered 4,146. The mortality amongst this latter class was about 6.6 per cent.

A branch hospital has been established at Baden, thus affording to the scrofulous patients an opportunity of using the mineral waters. The contingent expenses thus incurred were met by a theatrical benefit. The occasional endowment of a bed or beds, to which the name of the founder is appended, clothes, and various contributions, are equivalents to revenue to a great extent ; and thus this hospital has been enabled to save a reserve fund of £750 which, added to the capital, tends to secure its independence. The annual cost of the working of this institution is about £1000.

The Children's Hospital at Berlin,* (Elizabeth's) founded in 1843, has since been sedulously patronized by her Majesty, the Queen. This institution, owing to civic commotions and other causes, has not been able to furnish more than fifty beds for the object of the charity. The revenue for the year 1855, is made up of various contributions, besides money, viz., clothing, fruits, medicines, toys, &c., the names of the donors being carefully inserted in the report. By contracting the sphere of its usefulness, not only has this institution been enabled to weather the stormy political years it has passed, but a balance of 200 dollars in its favour is specified in the last account. The building contains a play-room, besides the open air play-ground, and a nice garden. The debt on the building now amounts to only 500 dollars. The managing committee of this institution, is composed of members of the nobility, medical profession, clergy, and others, besides the committee of ladies, who take a lively interest in the economic department, and in seeking the directions of the physicians fully carried out. The city of Berlin supports another similar institution. The average mortality in the Elizabeth's Hospital for

* Thirteenth Annual Report of Elizabeth's Children's Hospital, under the patronage of her Majesty the Queen. Berlin, 1856.

the past seven years has been 1 in 8.5 or 11.7 per cent.*

From the report of the Children's Hospital at Stockholm† for 1855, we find 183 patients were admitted : the mean number of beds filled was thirty-one ; average time of residence sixty-three days, and mortality 20 per cent. ; in the year 1854, 17 per cent.

Professor Von Duben arranges his patients on admission in three classes : first, apparently hopeless : second, dangerous : third, simple ailments. Eighteen cases were admitted of the first class, of which sixteen proved fatal : sixty-six of the second class were admitted—of these eighteen died : of the third division, ninety-nine were registered, and only three died. Of eighty-six students attending the Medico-Chirurgical Institute of Stockholm, fifty-three attended the clinique for sick children, so ably conducted by Professors Von Duben, Huss, and Santesson.

And now we come to our own city. In the year 1822, an institution devoted exclusively to the treatment of diseases of children, was founded in this city by two distinguished members of the medical profession, Sir Henry Marsh, Bart., and Dr. Charles Johnson. Previous to this date, no institution of a similar kind had been provided for the infantile population of this city. Immediately after the opening of this establishment, its value was at once estimated by the numbers that flocked for relief ; the numbers continued to increase daily, and for the last thirty-five years, an average of 4,000 children annually have received medical and surgical aid. Amongst the foremost objects of utility contemplated by the founders of this charity, was the diffusion of correct information respecting the dietetic and hygienic management of

* Edinburgh Medical Journal ; report of Continental Children's Hospitals.

† Berättelse von Sjukvården vid Kronprinsessan Lovisus Vårdanstalt för Sjuka, Barn in 1855. Stockholm, 1856. (Medical report of the Princess Louisa's Hospital for Sick Children, for 1855.)

children in health, as well as in sickness.* Particular pains were taken by the medical officers of the institution to this important subject, and in many instances with the happiest effects. The children of humble parents, who under a system of mismanagement, had been constantly subject to attacks of sickness, have, under a better hygienic system, become in many instances, comparatively exempt from disease; and when they are brought to the institution suffering from disease, their position is much more hopeful from the judicious measures which the mothers have been taught to adopt in the first instance. Facts too numerous and painful might be revealed, showing how often the hand of the nurse, or even the mother, has been the unconscious instrument of death. Thus, a knowledge of the proper management of infants, as well in health as in disease, is equally valuable to rich and poor.

So long ago as 1824, the establishment of an hospital for sick children was in contemplation for this metropolis. On this subject, that distinguished physician, the late Dr. Perceval, in a letter to Sir Henry Marsh, expresses himself as follows:—"Poor little suffering children are not the least interesting of our patients. By relieving them we assist their parents, and give them some idea of the proper management of their infant families. You mention the project of establishing an infant hospital—such an institution would, in many points of view, deserve support. The records of the Lying-in and Foundling Establishments, and the bills of mortality in great cities, amply evince the destructive influence of air contaminated by many breaths, on the infant frame." Again, "Such an asylum ought to admit of the classification of infectious diseases in distinct wards; and if ground could be afforded to support a cow or a few asses, the benefit would be considerably extended, even to the

* Report of Institution for Diseases of Children. Dublin, 1836.

opulent, who could there procure *genuine* asses milk. To relieve an industrious matron of the charge of a sickly offspring, would, in many instances, be the means of obviating penury and despondency. The treatment of extern patients was continued at this institution till the year 1856, when, from a variety of circumstances which it is needless to mention, it was temporarily closed, and I regret to add, with a considerable outstanding debt, but which has since been paid off. During the spring of 1857, my colleague Dr. Hardy and I undertook the task of re-opening this institution, and have endeavoured, as far as possible, to render it self-supporting, by the patients paying a small sum for advice and medicine, thereby fostering a spirit of independence and giving a sensible aid to the funds of the charity.

From the 1st of January, 1858, till the 31st of December, inclusive, the attendance of patients amounted to 4725. Thus, by a steady increase in the number of patients, coupled with a strict regard to economy in all our requirements, the outstanding debts have been wiped off, and the establishment for extern relief preserved in a comparatively efficient financial state. But finding the unsatisfactory accommodation which the houses of the poor afford sick children—that they cannot obtain the peculiar nursing suited for their ailments in the wards of a large hospital—the value of clinical instruction to students about a class of diseases which, for want of due facilities for studying their nature and treatment, has entailed a needless mortality—and the importance of training young women as experienced nurses; these, and other considerations, urged us to complete the half accomplished task, by adding beds. As yet we can only number six, but the virtue of the cause leads us confidently to hope that we may be enabled to increase the intern accommodation, so as to meet the

pressing demands which suffering humanity is daily urging on us.

I regret that time will not permit me on the present occasion to review more minutely the various continental establishments for sick children, but "en passant" it might be well to investigate the relative mortality in some of these institutions compared with the surrounding general mortalities in the various cities and countries in which they are situated. We have already seen that the mortality of children in London, up to their tenth year, is about 35 per cent. and the mortality in the Children's Hospital averages 14 per cent. This, though not a very low mortality, yet is a very favourable contrast. In Manchester, where the computation is that 55 per cent. of children die before they reach the age of five years, the mortality according to the last report of the Children's Hospital, was at the rate of $13\frac{3}{5}$ per cent. But looking to the returns of the continental institutions, we find that in Vienna, taking a mean of eighteen years, the deaths of children of all classes amount to 60 per cent. and the average mortality of the Children's Hospital about $24\frac{1}{2}$ per cent., these percentages are appallingly high; even the mortality in the adult hospitals in Vienna ranges as high as 14 per cent. equal to that of the London Children's Hospital. Over all Austria the computation is, that 26 per cent. of children born die in their first year, and 37 per cent. within the first four years.

In Paris, in 1820, "1441, or nearly 33 per cent. perished in the two first years of infancy: in the fifteen years previous to 1831, the average deaths of all children born were upwards of 18 per cent. within the first year, and 28 per cent. before the completion of the fourth year of existence. For a long average of years $19\frac{1}{4}$ per cent. has been the average mortality in the great hospital for sick children in Paris."

Casper, the eminent statistician, has informed us

that in Berlin, in an average of forty years, up to 1822, of all children born there, 52 per cent. died in the first year ; while during the war in the early part of the present century, 71 per cent. perished. An average of years shows the mortality of the Hospital for Sick Children in Berlin to be only about 11 per cent.

Of 1,066 children under seven years of age in the hospital at Milan in 1855, the deaths were 168, or 15.76 per cent.; of youths from eight to fifteen years 2095 were treated, and the deaths were 154, or 7.35 per cent.

Thus the mortality of young children is one of the most important considerations in connection with sanitary science, their delicate physical organisms indicating the various phases of sanitary circumstances, so that infantile mortality, under certain conditions, is the best proof of differences of social arrangements in different districts. The places where the mortality is most rife, of necessity are places where the survivors are apt to be sickly, and if they fight through a scrofulous childhood, to realize a stunted puberty, they become the parents of a still more unhealthy offspring than themselves, and less capable of mental and physical exertion. It cannot be too widely disseminated," says Mr. Simon, "That a high local infantile mortality must necessarily indicate a high local prevalence of those causes which determine a degeneration of race.

And now, in conclusion, I have only to add that the institutions of this metropolis have long maintained the foremost rank among the schools of the world : till very recently one establishment may be said to have been wanting, as we have seen London, Manchester, the continental capitals, and towns of second and third rate importance, have felt the advantages to be derived from the founding hospitals for sick children, and in many instances the foundation

of one, ere long, led on to a second similar institution in the same city. In Vienna, Stockholm, and elsewhere, separate chairs have been endowed for this special branch of medical science. With these facts before us,—humanity having as urgent claims here as elsewhere—pædiatric science making rapid strides, which a reliance on by-gone prestige cannot keep pace with, the establishment of an hospital for the treatment of children's diseases may thus be said to have forced itself on this community on the limited scale already mentioned, which it is confidently to be hoped, at no distant day, may be extended to meet the exigencies of this metropolis.

The subject is one with which the deepest interests of humanity are interwoven, and which is daily becoming more urgent, inasmuch as to some extent we have been outstripped, in this particular instance, by our sister kingdom and continental neighbours. The statistics daily accumulating shows its national claims, and that its reception or rejection is not dependent on local whims or caprices ; its inherent merit is its support, which must give it, and that ere long, the consideration it deserves, when public or private benevolence will not be wanting to furnish the required means.

THE END.

